

abscess containing pus and torn pieces of the psoas muscle, and at the bottom of it the head of the femur was to be seen where it had burst through the acetabulum. The acetabulum was broken in three pieces; the smallest of these was placed with the round ligament upon it, and unbroken on the head of the bone; the second was the horizontal ramus of the pubis which was separated from the symphysis pubis and ischium, and the third, the ischium, which was no longer connected with the ilium.—*Gaz. Méd. de Paris*. No. 17. 1838.

60. *Ligature of the Primary Iliac Artery near the bifurcation of the Aorta*.—This operation, which was first performed by our distinguished collaborator, Professor Mott, and has only twice been executed since, once by Mr. Crampton of Dublin, whose patient died on the eighth day of hemorrhage, and once by Mr. Guthrie for supposed aneurism, but which proved to be fungus hæmatodes, has been recently performed with success by Professor SALOMON of St. Petersburg. We will give the details of the case in our next number.

61. *Kreosote in Cancer*.—Dr. FRIESE states that he employed every kind of treatment for the cure of cancerous ulcerations without success, until he resorted to kreosote. In the case of a lady who was affected with cancerous ulceration of the skin on the calf of the leg, he applied over the surface of the sore, one part of kreosote in three of distilled water. The surface quickly became white; a thin eschar formed, which was detached on the fourth day, and the sore was covered with healthy granulations. The central portion healed after the third application, the edges required the wash to be repeated several times more, and stronger—equal parts of kreosote and water. The lady was perfectly cured.—*Berlin Med. Zeitung*. No. 13. 1837.

OPHTHALMOLOGY.

62. *On a Singular Development of Polarizing Structure in the Crystalline Lens after Death*. By Sir DAVID BREWSTER.—In examining the changes which are produced by age in the polarizing structure of the crystalline lenses of animals, I was induced to compare these changes with those which I conceived might take place, after death, when the lens was allowed to indurate in the air, or was preserved in a fluid medium. After many fruitless experiments I found that distilled water was the only fluid which did not affect the transparency of the capsule, and my observations were therefore made with lenses immersed in that fluid. The general polarizing structure of the crystalline in the *sheep*, *horse*, and *cow*, consists of *three* rings, each composed of *four* sectors of polarized light, the two innermost rings being *positive* like *zircon*, and the outermost *negative*, like *calcareous* spar. In other cases, especially when the lenses were taken from older animals, *four* rings were seen, the innermost of which was positive as before, and the rest *negative* and *positive* in succession.

I now placed a lens which gave three rings, in a glass trough containing distilled water, and I observed the changes which it experienced from day to day. These changes were such as I had not anticipated; but though I have observed and delineated them under various modifications, I shall confine myself at present to the statement of the general result. There is a *black* ring between the two positive structures or luminous rings. After some hours' immersion in distilled water, this black ring becomes *brownish*, and on the second day after the death of the animal, a *faint blue* ring of the first order makes its appearance in the middle of it, and its double refraction, as exhibited by its polarized tint, increases from day to day, till the tint reaches the *white* of the first order. Simultaneously with this change of colour, the breadth of this new ring gradually increases, encroaching slightly upon the inner positive ring, but considerably upon the second positive ring; so that the black or neutral ring which separates the two positive structures, and in the middle of which a new luminous ring is created, divides itself into two black neutral rings, the *one* advancing *outwards*, and *diminishing* the breadth as well as the intensity of the second series of positive sectors, and the other advancing *inwards*, and diminishing the breadth and

intensity of the inner or central sectors. While these changes are going on, the *outer luminous or negative ring* advances inwards, encroaching also on the *second positive ring*.

Upon examining the character of the new luminous ring, the developement of which has produced all these changes, I found it to be *negative*, so that at a certain stage of these variations we have a *positive* and a *negative* doubly refracting structure succeeding each other alternately, from the centre to the circumference of the lens, such as I have often observed in lenses taken from animals of greater age, and examined immediately after death.

After this stage of perfect developement, when there is a marked symmetry both in the relative size and polarizing intestines of the four series of sectors, the lens begins to break up. The new *negative ring* encroaches so much on the two *positive* ones, which it separates, that the outer one is sometimes completely extinguished, while the breadth and tint of the inner sectors are greatly diminished, so that the highest double refraction exists in the newly developed ring. In a day or two this ring also experiences a great change of distinctness and intensity, and the lens commonly bursts on the fifth or sixth day, sometimes in the direction of the septa or lines where its fibres have their origin and termination, and sometimes in other directions.

In order to give a general idea of the cause of these singular changes, I may state that the capsule which incloses the lens is a highly elastic membrane—that it absorbs distilled water abundantly—and that, in consequence of this property, the lens gradually increases in bulk, and becomes more globular, till the capsule bursts with the expansive force of the overgrown lens. That the reaction of the elastic capsule contributes to modify the polarizing structure of the interior mass, cannot admit of a doubt, as it is easy to prove that that structure is altered by mechanical pressure; but I cannot conceive how such a reaction could create a new negative structure between two positive ones, and produce the other phenomena which I have described. I have been led therefore to the opinion, that there is in the crystalline lens the germ of the perfect structure, or rather the capability of its being developed by the absorption of the aqueous humour; that this perfect structure is not produced till the animal frame is completely formed; and that when it begins to decay the lens changes its density and its focal length, and sometimes degenerates into that state which is characterized by hard and soft cataract.

The results, of which I have now given an exceedingly brief notice, appear to me to afford a satisfactory explanation of those changes in the lens which terminate in cataract, a disease which seems to be more prevalent than in former times. Accidental circumstances have led me to study the progress of this disease in one peculiar case, in which it was arrested and cured; and I am sanguine in the hope that a rational method of preventing, and even of stopping the progress of this alarming disease, before the laminae of the lens have been greatly separated or decomposed, may be deduced from the preceding observations.

As the experiments, however, and views upon which this expectation is founded, are more of a physiological than of a physical nature, I am desirous of submitting an account of them to the Medical Section, that they may undergo that strict examination which they could receive only from the experience and science of that distinguished body.—*Report of sixth Meeting of British Association.*

63. *On the Cause, Prevention and Cure of Cataract.*—The discovery of Sir DAVID BREWSTER, of a singular change of structure, which takes place in the crystalline lens after death, consisting in the developement of a negative polarizing band or ring between the two positive rings nearest the centre of the lens; the gradual encroachment of this new structure upon the original polarizing structure of the lens; and the final bursting of the lens after it had swelled to almost a globular form by the absorption of distilled water, has led this eminent philosopher to entertain some peculiar views relative to the cause, prevention, and cure of cataract.

"As the crystalline lens floats in its capsule there can be no doubt," he observes, "that it is nourished by the absorption of the water and albumen of the aqueous humour, and that its healthy condition must depend on the relative proportion of these ingredients. When the water is in excess the lens will grow soft, and may